AVICH score

Parameter	Definition	Points
Arteriovenous malformation size (cm)*	<3	1
	3–6	2
	>6	3
Deep venous drainage*	No	0
	Yes	1
Eloquence*	No	0
	Yes	1
Age†	<20 years	1
	20–40 years	2
	>40 years	3
Diffuse nidus†	No	0
	Yes	1
Glasgow Coma Scale score‡	13–15	0
	5–12	1
	3–4	2
Intracerebral hemorrhage volume‡	<30 cm^3	0
	≥30 cm^3	1
Intraventricular hemorrhage‡	No	0
	Yes	1

*Derived from the Spetzler-Martin grading system.
†Derived from the Lawton-Young grading system.
‡Derived from the intracerebral hemorrhage score; maximum, 13 points; minimum, 2 points.

The published arteriovenous malformation-related intracerebral hemorrhage (AVICH) score showed better outcome prediction for patients with arteriovenous malformation (AVM)-related intracerebral haemorrhage (ICH) than other AVM or ICH scores.

Neidert et al. from the Department of Neurosurgery, University Hospital Zurich, University of California San Francisco, University of Washington, Seattle, Graduate School of Biomedical and Health Sciences Hiroshima University, University Hospital Frankfurt, Kokura Memorial Hospital, Fukuoka, Fukui Red Cross Hospital, University Hospital Dresden, University Hospital VUB Brussels, Beth Israel Deaconess Medical Center, Harvard University, Boston, University Hospital Essen, presented the results of a multicentre, external validation of the AVICH score.

All participating centres (n=11) provided anonymous data on 325 patients to form the Spetzler-Martin AVM grading system, the Supplementary Spetzler-Martin AVM grading scale, the ICH score and the AVICH score. Modified Rankin Scale at last follow-up (mean 25.6 months) was dichotomized into favourable (mRS 0-2, n=210) and unfavourable (mRS 3-6;n=115). Univariate and AUROC analyses were performed to validate the AVICH score.

Except nidus structure and AVM size, all single parameters forming the SM, sSM, ICH and AVICH score

and the scores itself were significantly different between both outcome groups in the univariate analysis. The AVICH score was confirmed to be the highest predictive outcome score with an AUROC of 0.765 compared with 0.705 for the ICH score and 0.682 for the sSM grade.

The multicentre-validated AVICH score predicts clinical outcome superior to pre-existing scores [1].

They suggest the routine use of this score for future clinical outcome prediction and in clinical research [2].

1)
Neidert MC, Lawton MT, Mader M, Seifert B, Valavanis A, Regli L, Bozinov O, Burkhardt JK. The AVICH Score: A Novel Grading System to Predict Clinical Outcome in Arteriovenous Malformation-Related Intracerebral Hemorrhage. World Neurosurg. 2016 Aug;92:292-297. doi: 10.1016/j.wneu.2016.04.080. Epub 2016 May 2. PubMed PMID: 27150647.
2)
Neidert MC, Lawton MT, Kim LJ, Nerva JD, Kurisu K, Ikawa F, Konczalla J, Dinc N, Seifert V, Habdank-Kolaczkowski J, Hatano T, Hayase M, Podlesek D, Schackert G, Wanet T, Gläsker S, Griessenauer CJ, Ogilvy CS, Kneist A, Sure U, Seifert B, Regli L, Bozinov O, Burkhardt JK. International multicentre validation of the arteriovenous malformation-related intracerebral haemorrhage (AVICH) score. J Neurol Neurosurg Psychiatry. 2018 Nov;89(11):1163-1166. doi: 10.1136/jnnp-2017-316259. Epub 2017 Oct 6. PubMed PMID: 28986471.